

REMARKS

The disclosure has been objected to and claim 2 rejected under 35 USC 112 for the reasons stated in sections 1-3 on page 4 of the Office Action and by this Amendment, the entire application has been revised such that it is submitted that the entire application now meets all of the statutory requirements of 35 USC 112 as to form.

Claims 1-4 and 9-11 have been rejected under 35 USC 103 as obvious over Paavola in view of Suolahti for the reasons stated in section 5 bridging pages 5 and 6 of the Office Action. In addition, the Examiner has indicated that claims 5-8 would be allowable if rewritten in independent form so as to include all of the limitations of the base claim and any intervening claims.

While not necessarily agreeing with the Examiner, for the purpose of expediency, claim 5 has been canceled without prejudice or disclaimer of its subject matter and its recited limitation, in a slightly modified form, added to independent claim 1. Furthermore, the claims have been amended so as to be more consistent with U.S. patent practice.

In view of the above, it is submitted that claims 1-4 and 6-11 should have been a condition suitable for allowance.

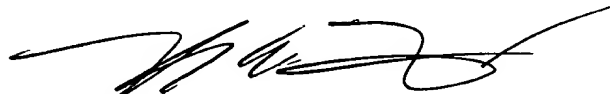
Additional references were cited by the Examiner but not utilized in the rejection of the claims and accordingly, no further comment on these references is needed.

No other issues remaining, reconsideration and favorable action upon all of the claims now present in the application is respectfully requested.

To the extent necessary, please charge any shortage in fee due in connection with this filing to Deposit Account No. 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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**VERSION OF AMENDED ABSTRACT  
SHOWING CHANGES MADE**

A wrapping apparatus, in which the supporting elements [(4)] supporting a film roll [(5)] are mounted on the frame [(3)] of a film dispenser [(1)] with bearings permitting free rotation so that the film roll supported by them is freely rotatable. The pre-stretching rollers [(6, 7)] are mutually engaged via a transmission and are likewise mounted on the frame with bearings permitting free rotation. A pendulum roller [(9)] comprised in the film dispenser and the spring force of a spring [(10)] applying a load on it have been so adapted that the pendulum roller [(9)] forms between the second pre-stretching roller [(7)] and the deflecting roller [(11)] a bend that functions as a film supply containing a varying amount of film, depending on the prevailing draw of the film to keep the drawing velocity and tension of the film substantially constant at the pre-stretching rollers regardless of the variation in the draw and velocity of the film that is caused by the shape of the article being wrapped. [(Fig. 4)].

**VERSION OF AMENDED SPECIFICATION  
SHOWING CHANGES MADE**

Page 1, paragraph 1, please amend to read as follows:

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

The present invention relates to a wrapping apparatus [as defined in the preamble of claim 1]. More particularly, the present invention relates to a wrapping apparatus for winding a wrapping film about an article to be wrapped.

**Description of the Related Art**

Page 2, second paragraph, please amend to read as follows:

To eliminate the variation of tension, prior-art apparatus use a sensor connected to the pendulum roller to detect the degree of film tension. The film tension detected by the sensor is used as a basis to control the speed of rotation of either the motor driving the film roll, as in [specification] European Patent No. EP 0 936 141 A1, the motor driving the posterior pre-stretching roller as seen in the direction of film motion, as in [specification] US Patent No. 5,123,230A, or the drive motor of some other roller used to draw the film from the film roll, as in [specification] Patent No. WO 93/24373. These arrangements are designed to eliminate the variation in film tension resulting from the angular shape of the article to be wrapped and to achieve a constant film tension.

Page 2, before the fourth paragraph, please insert the following:

**SUMMARY OF THE INVENTION**

Page 3, please delete the second full paragraph in its entirety.

Page 4, before the second full paragraph, please insert the following:

**BRIEF DESCRIPTION OF THE DRAWINGS**

Page 4, paragraph 4, please amend to read as follows:

Fig. 1 presents a diagrammatic side view of an embodiment of the wrapping apparatus [of] in accordance with the present invention,

Page 5, please insert before the first full paragraph:

DETAILED DESCRIPTION

**VERSION OF AMENDED CLAIMS  
SHOWING CHANGES MADE**

1. (Amended) A wrapping [Wrapping] apparatus for winding a wrapping film [(F)] about an article to be wrapped, [especially an article of a shape differing from a circular shape,] said wrapping apparatus comprising a film dispenser [(1)] arranged to revolve along a circular track [(2)] at a substantially constant velocity about the article to be wrapped, said film dispenser comprising: a frame [(3)]; supporting elements [(4)] for supporting a film roll [(5)] on the frame; a pre-stretching device [(6, 7)] comprising a first pre-stretching roller [(6)] rotatably mounted on the frame with bearings at both ends to receive the film from the film roll and a second pre-stretching roller [(7)] rotatably mounted on the frame with bearings at both ends and disposed in a position parallel to and at a distance from the first pre-stretching roller, which pre-stretching rollers are coupled together via a direct transmission [(8)] so that their circumferential velocities differ from each other, the pre-stretching of the film thus occurring within the film portion between the pre-stretching rollers as a result of the different circumferential velocities of the pre-stretching rollers; a pendulum roller [(9)] disposed after the second pre-stretching roller in the direction of film movement to receive the pre-stretched film from the second pre-stretching roller, said pendulum roller being spring-loaded with a spring [(10)] acting against the drawing direction of the film web; and a deflecting roller [(11)] mounted by both ends with bearings on the frame, in a position parallel to the pre-stretching rollers and the pendulum roller, the film web coming from the pendulum roller being passed over the deflecting roller to the article being wrapped; wherein [,characterized in that] the supporting elements [(4)] are mounted on the frame [(3)] with bearings permitting free rotation so that the film roll supported by them is freely rotatable; [that] wherein the pre-stretching rollers [(6, 7)] are mutually engaged and mounted on the frame with bearings so as to be freely rotatable; and that the pendulum roller [(9)] and the spring force of the spring [(10)] have been so adapted that the pendulum roller [(9)] forms between the second pre-stretching roller [(7)] and the deflecting roller [(11)] a bend acting as a film supply which contains a varying amount of film, depending on the prevailing draw of the film, to keep the drawing velocity and tension of the film substantially constant at the pre-stretching rollers regardless of the variation in the draw and velocity of the film in relation to the film dispenser that is caused by the shape of the article being wrapped; and wherein the spring pendulum

roller, pre-stretching roller and deflecting roller are arranged with respect to each other to keep the film tension substantially constant regardless of the position of the pendulum roller.

2. (Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the pendulum roller [(9)] comprises a diverting element [(12)] which is parallel to the pre-stretching rollers [(6, 7)] and the deflecting [diverting] roller [(11)], the film [(F)] being passed over said diverting element, pendulum arms [(13)] connected to each end of the diverting element [(12)] transversely to the longitudinal direction of the diverting element, a turn arbor [(14)] attached to the pendulum arms and pivoted on the frame [(3)], and a lever [(15)] attached to the turn arbor [(14)] and provided with a fastening element [(16)] for fastening the spring [(10)].

3. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the apparatus comprises limit stop elements [(17, 18)] for limiting the deflection angle of the pendulum roller [(9)] to a pre-determined magnitude.

4. (Amended) [Apparatus] The apparatus as defined in claim 3, wherein [characterized in that] the limit stop elements [(17, 18)] comprise a first limit stop element [(17)], which determines a first extreme position [(I)] of the pendulum roller [(9)], in which the film supply formed by it contains a maximum amount of film, and a second limit stop element [(18)], which determines a second extreme position [(II)] of the pendulum roller [(9)], in which the film supply formed by it contains a minimum amount of film.

6. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the maximum deflection angle of the pendulum arm [(13)] between its extreme positions is  $60^{\circ}$ ; and that, when the distance between the swing axis [(14)] of the pendulum roller [(9)] and the center axis of the [diverting] deflecting roller [(11)] is  $x$ , then

- the distance between the center axis of the second pre-stretching roller [(7)] and the center axis of the diverting element [(12)] of the pendulum roller [(9)] equals  $3.04 \cdot x$ ;
- the distance between the center axis of the diverting element [(12)] of the pendulum roller [(9)] and the swing axis [(14)] of the pendulum roller [(9)] equals  $1.31 \cdot x$ ;
- the distance between the center axis of the diverting roller [(11)] and the

center axis of the second pre-stretching roller [(7)] equals  $1.73 \cdot x$ ; and

- the distance between the swing axis [(14)] of the pendulum roller [(9)] and the center axis of the second pre-stretching roller [(7)] equals  $2.62 \cdot x$ .

7. (Amended) [Apparatus] The apparatus as defined in claim 6, wherein [characterized in that] the distance  $x$  between the swing axis [(14)] of the pendulum roller [(9)] and the center axis of the diverting roller [(11)] equals 105.4mm.

8. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the spring [(10)] is a helical spring connected by one end to the lever [(15)] and by the other end to the frame [(3)].

9. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the first pre-stretching roller [(6)], the pendulum roller [(9)] and the [diverting] deflecting roller [(11)] are in contact with the first side [(19)] of the film [(F)] while the second pre-stretching roller [(7)] is in contact with the second side [(20)] of the film.

10. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the direct transmission [(8)] between the pre-stretching rollers [(6, 7)] is a gear transmission comprising a first gear [(21)], which is attached to the first pre-stretching roller [(6)], and a second gear [(22)], which is attached to the second pre-stretching roller [(7)].

11. (Twice Amended) [Apparatus] The apparatus as defined in claim 1, [characterized in that] wherein the transmission ratio of the transmission [(8)] is of the order of 90%.